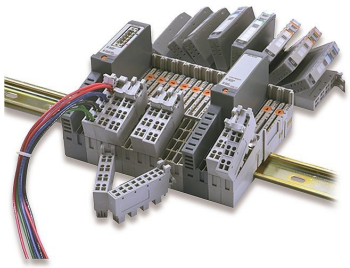
1734 POINT I/O

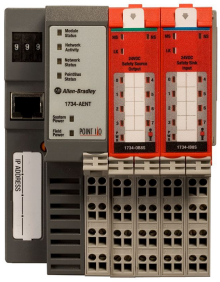
POINT I/O

Hit The Point!



POINT I/O™ is a family of modular I/O modules that are ideal for applications where flexibility and low-cost of ownership are key for successful control system design and operation. As a key element in the Rockwell Automation Integrated Architecture, its comprehensive diagnostics and configurable features allow the product to easily be applied to any automation system and reduce engineering costs through standardization. It can be used in remote device panels, local control panels, and can be accessed from many locations including the Internet. This product is just-what-you-need granularity in one to eight points to reduce system cost and size.

POINT Guard I/O™ modules are safety-rated I/O modules designed to fit into the standard POINT I/O system, offering automation and safety functionality in a maximum density I/O solution. They are ideal for use in applications requiring safety and automation control. POINT Guard I/O and POINT I/O can be controlled by a single GuardLogix controller for both safety and automation control through one node. If separate safety control is required, a GuardLogix controller can be used with POINT Guard I/O modules for safety control and a ControlLogix controller can be used with POINT I/O modules for automation control. No changes are required to the POINT I/O system.

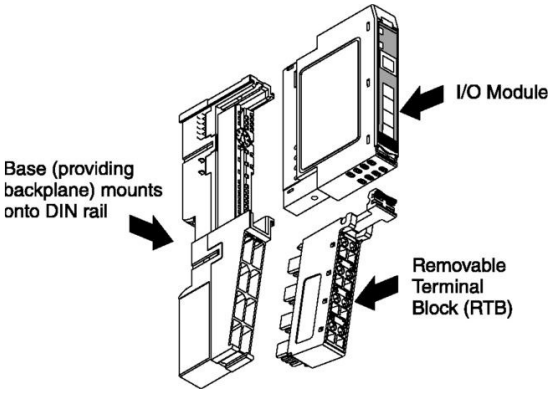


Benefits

- Extremely fast I/O backplane uses change-of-state (COS) connections to maximize performance (polling available in configuration mode).
- Module assembly mounts horizontally or vertically (no derating required) to fit your needs.
- Compact design lets it fit into limited panel space.
- Auto Device Replacement (ADR) allows OEMs to add machine features and I/O modules without making changes to the machine's control software.
- Removal and Insertion Under Power (RIUP) makes it possible to replace a module while keeping the rest of the system running.
- Modular components install easily by sliding together; pull apart easily for maintenance and troubleshooting. No tools needed.
- Removable wiring system for economic system commissioning, troubleshooting, calibration, and diagnostics – 70% time and cost savings.
- Efficient network solutions with multiple DeviceNet interfaces, ControlNet, EtherNet/IP, and PROFIBUS DP communication adapters.
- Point Guard I/O is TÜV-certified for functional safety up to and including SIL CL 3 and Performance Level (e), Catagory 4.

Product Design

1734 POINT I/O modules offer one to eight points per module. The I/O modules are interfaced to a network through a communication interface, which includes a built-in power supply that converts incoming 24V DC power to 5V DC backplane power.The I/O modules receive power from the power supply through the backplane. Each type of communication interface supports a maximum of 13 to 17 I/O modules, with a maximum of 10 A field power. A POINT I/O assembly can be expanded up to a maximum of 63 I/O modules or 504 channels.



1734 POINT Guard I/O modules communicate by using CIP Safety protocol over EtherNet/IP for GuardLogix controllers or DeviceNet for SmartGuard 600 controllers. The application of CIP Safety protocol allows simultaneous transmission of safety and automation control and diagnostic data over one CIP network. For EtherNet/IP connectivity, use a 1734-AENT or 1734-AENTR adapter. For DeviceNet communication, use the 1734-PDN communication interface module.

POINT I/O System Components

The POINT I/O family consists of modular components. Each component snaps together and mounts onto a DIN rail to form the POINT I/O system. Required system components include:

Component	Description
Communication Interface	• Communication adapter modules are available for ControlNet, DeviceNet (with and without Subnet connectivity), EtherNet/IP, or PROFIBUS DP networks. • A low-cost DeviceNet communication interface and a DeviceNet communication interface with up to 16 integrated I/O points are also available. • Communication modules include a built-in power supply that converts incoming 24V DC power to 5V DC backplane power to power the I/O modules.
I/O Module	• I/O modules plug into the POINT I/O mounting base, which mounts on a DIN rail. • Options include: digital, analog, thermocouple, RTD, and specialty. • Point Guard I/O modules are TÜV-certified for functional safety up to and including SIL CL 3 and Performance Level (e), Category 4.
Mounting Base	• Provides the mounting location for the I/O module and the removable terminal base (RTB). • Forms the interconnect for the I/O backplane communication and field power distribution. • The mounting base and RTB are sold pre-assembled as a terminal base assembly. • A one-piece mounting base with integrated terminal locations is also available.
Removable Terminal Block (RTB)	• Snaps into the mounting base and provides the terminal locations for the I/O. • The RTB separates from the mounting base and I/O module for rapid installation and commissioning of the system.

Optional system components include:

Component	Description
Expansion Power Supply	• Extends the backplane bus power and creates a new field voltage partition in order to support additional I/O modules, up to the maximum allowed per assembly. • Choose from 24V DC or 120/240V AC units.
Field Power Distributor Module	• Discontinues the I/O circuit power bus in order to change the field power distribution source for I/O modules to the right of the field power distributor. • Allows a broad range of voltage inputs in the I/O assembly.

Environmentals and Certifications

POINT I/O Modules Environmental Specifications

	POINT I/O Family
Enclosure Type Rating	None (open-style)
Mounting Type	DIN-rail
Operating Temperature⋆	-20…55 °C (-4…131 °F)
Nonoperating Temperature	-40…85 °C (-40…185 °F)
Relative Humidity	5…95% noncondensing
Operating Shock	30 g
Nonoperating Shock	50 g
Vibration	5 g at 10…500 Hz

⋆ 1734-APB Operating Temperature: -20…55 °C (-4…131 °F)

POINT I/O Modules Approximate Dimensions

Cat. No.	Dimensions (HxWxD), Approx.
1734-EP24DC 1734-FPD	76.2 x 25.4 x 133.4 mm (3.00 x 1.00 x 5.25 in.)
1734-PDN	76.2 x 25.4 x 133.4 mm (3.00 x 1.00 x 5.25 in.)
POINT I/O Adapter Modules	76.2 x 54.9 x 133.4 mm (3.00 x 2.16 x 5.25 in.)
POINT I/O 2 Port EtherNet/IP Adapter	76.2 x 73.0 x 133.4 mm (3.00 x 2.87 x 5.25 in.)
POINT I/O Modules	76 x 12 x 56 mm (2.97 x 0.47 x 2.21 in.)
POINT Guard I/O Modules	77 x 25 x 55 mm (3.03 x 0.98 x 2.17 in.)

POINT I/O Modules Certifications

Certifications: POINT I/O Modules: CE, C-Tick, ODVA, ATEX.
POINT Guard I/O Modules: CE, c-UL-us, C-Tick, ODVA, ATEX, KC, TÜV-certified for functional safety up to and including SIL CL 3, PL(e)/Cat. 4.

When product is marked. See the Product Certifications link at ab.rockwellautomation.com/ for Declarations of Conformity, Certificates, and other certification details. For TÜV and SIL certification details, see the Safety Certificates and SIL link.

Analog I/O Modules

Analog Input Modules

Cat. No.	Inputs	Signal Range	Input Resolution	Accuracy	Step Response, per Channel	Input Conversion Type	PointBus Current (mA)	External DC Supply Current, Max.	Power Dissipation, Max.	Terminal Base Unit
1734-IE2C	2 single-ended	4...20 mA 0...20 mA	16 bits - over 21 mA 0.32 µA/cnt	0.1% Full Scale at 25 °C*	70 ms at Notch = 60 Hz (default) 80 ms at Notch = 50 Hz 16 ms at Notch = 250 Hz 8 ms at Notch = 500 Hz	Delta Sigma	75 mA	10 mA	0.6 W at 28.8V DC	1734-TB or 1734-TBS
1734-IE4C	4 single-ended									
1734-IE8C	8 single-ended									
1734-IE2V	2 single-ended	0...10V ±10V	15 bits plus sign 320 µV/cnt in unipolar or bipolar mode	0.1% Full Scale at 25 °C*		Delta Sigma	75 mA	15 mA	0.75 W at 28.8V DC	1734-TB or 1734-TBS
1734-IE4S	4 single-ended , safety-rated	+/-5V DC Voltage Inputs +/-10V DC Voltage Inputs 0...20 mA Current Inputs 0...24V DC Tachometer	12 bits	Voltage Mode: ±0.5% Full Scale at 25°C Current Mode: ±0.6% Full Scale at 25°C Tachometer Mode: ±0.1%/ °C/100 Hz	450 ms @ Filter Frequency = 1 Hz 125 ms @ Filter Frequency = 5 Hz 72 ms @ Filter Frequency = 10 Hz 25 ms @ Filter Frequency = 50 Hz	Successive approximation	110 mA	65 mA	2.2 W	1734-TB, 1734-TOP, and 1734-TOP3

* Includes offset, gain, non-linearity, and repeatability error terms.

Temperature Input Modules

Cat. No.	Inputs	Signal Range	Input Resolution	Absolute Accuracy	Step Response, per Channel	Input Conversion Type	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-IR2	2 single-ended RTD	0...600 Ω	16 bits 9.5 mΩ/cnt 0.03 °C/cnt (Pt385 @ 25 °C) [32.05 °F/cnt (Pt385 @ 77 °F)]	0.1% Full Scale at 25 °C (77 °F)	60 ms at Notch = 50 Hz 50 ms at Notch = 60 Hz 30 ms at Notch = 100 Hz 25 ms at Notch = 120 Hz 15 ms at Notch = 200 Hz 13 ms at Notch = 240 Hz 10 ms at Notch = 300 Hz 8 ms at Notch = 400 Hz 6 ms at Notch = 480 Hz	Delta Sigma	220	1.0 W	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS
1734-IR2E		0...200 Ω							
1734-IT2I	2 differential Thermocouple	±75 mV	15 bits + sign 2.5 µV/cnt 15 bits + sign 2.5 µV/cnt	0.1% Full Scale at 25 °C*			175	1.0 W	1734-TBCJC

* Includes offset, gain, non-linearity, and repeatability error terms.

Temperature Input Modules—Additional Specifications

	1734-IR2	1734-IR2E	1734-IT2I
Number of Inputs	2 single-ended RTD		2 differential Isolated Thermocouple, Millivolt
Thermocouple Resolution	–		Type B 30...1820 °C (86...3308 °F) 3 counts/°C Type C 0...2315 °C (32...4199 °F) 6 counts/°C Type E -270...1000 °C (-454...1832 °F) 24 counts/°C Type J -210...1200 °C (-454...2192 °F) 21 counts/°C Type K -270...1372 °C (-454...2502 °F) 13 counts/°C Type N -270...1300 °C (-454...2373 °F) 11 counts/°C Type R -50...1768.1 °C (-58...3214 °F) 4 counts/°C Type S -50...1768.1 °C (-58...3214 °F) 4 counts/°C Type T -270...400 °C (-454...752 °F) 15 counts/°C
Cold Junction Compensation	–		Included in 1734-RTBCJC Remote Termination Block
Cold Junction Compensation Range	–	–	0...70 °C
Input Update Rate, per Module	40 ms at Notch = 50 Hz 33 ms at Notch = 60 Hz (default) 20 ms at Notch = 100 Hz 17 ms at Notch = 120 Hz 10 ms at Notch = 200 Hz 8 ms at Notch = 240 Hz 7 ms at Notch = 300 Hz 5 ms at Notch = 400 Hz 4 ms at Notch = 480 Hz		20 ms at Notch = 50 Hz 17 ms at Notch = 60 Hz (default) 10 ms at Notch = 100 Hz 8 ms at Notch = 120 Hz 5 ms at Notch = 200 Hz 4 ms at Notch = 240 Hz 3 ms at Notch = 300 Hz 3 ms at Notch = 400 Hz 2 ms at Notch = 480 Hz
Sensors Supported	100Ω Pt α = 0.00385 Euro (-200...+870 °C) 200Ω Pt α = 0.00385 Euro (-200...+630 °C) 100Ω Pt α = 0.003916 Euro (-200...+630 °C) 200Ω Pt α = 0.003916 Euro (-200...+630 °C) 10Ω Cu α = 0.00427 Euro (-200...+260 °C) 100Ω Ni α = 0.00618 Euro (-60...+250 °C) 120Ω Ni α = 0.00672 Euro (-60...+250 °C) 120Ω Ni α = 0.00618 Euro (-60...+250 °C)	100Ω Pt α = 0.00385 Euro (-200...+870 °C)	–
Data Format	Signed integer		Signed integer

Analog Output Modules

Cat. No.	Outputs	Signal Range	Output Resolution	Absolute Accuracy	Step Response to 63% of FS	Output Conversion Rate	PointBus Current (mA)	External DC Supply Current, Nom.	Power Dissipation, Max.	Terminal Base Unit
1734-OE2C	2 single-ended	4...20 mA 0...20 mA	13 bits - over 21 mA 2.5 µA/cnt	0.1% Full Scale at 25 °C*	24 µs	16 µs	75 mA	50 mA @ 24V DC (including outputs @ 20 mA)	1.0 W at 28.8V DC	1734-TB or 1734-TBS
1734-OE4C	4 single-ended							220 mA	1.86 W at 28.8V DC (750 Ω load on each output) 2.15 W at 28.8V DC (0 Ω load on each channel)	
1734-OE2V	2 single-ended	0...10V ±10V	14 bits (13 + sign) 1.28 mV/cnt in unipolar or bipolar mode	0.1% Full Scale at 25 °C*	20 µs	20 µs	75 mA	35 mA @ 24V DC (including outputs @ 3 mA)	1.0 W at 28.8V DC	1734-TB or 1734-TBS

* Includes offset, gain, non-linearity, and repeatability error terms.

Digital I/O Modules

The 1734 digital I/O modules support:

- A wide variety of voltage interface capabilities.
- Isolated and non-isolated module types.
- Point-level output fault states for short-circuit and wire-off diagnostics.
- Choice of direct-connect or rack-optimized communications.
- Field-side diagnostics on select modules.
- Safety applications up to and including SIL 3, Cat. 4, PL(e), when using 1734-IB8S or 1734-OB8S with a GuardLogix, SmartGuard 600, or GuardPLC controller.

POINT Digital AC Input Modules

Cat. No.	Inputs	Voltage Category	Input Delay Time, On to Off	On-State Current, Min.	Input Impedance, Nom.	Off-State Current, Max.	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-IA2	2 Non-isolated, current sinking	120V AC (65V AC...132V AC)	20.0 ms hardware + (0...65 ms selectable)	4.0 mA @ 65V AC, 60 Hz	10.6 kΩ	2.7 mA @ 43V AC	75 mA	0.1 W at 132V AC	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS
1734-IA4	4 Non-isolated, current sinking								
1734-IM2	2 Non-isolated, current sinking	220V AC (159V AC...264V AC)		6.2 mA @ 159V AC, 60 Hz	22.3 kΩ	2.9 mA @43V AC			
1734-IM4	4 Non-isolated, current sinking								

POINT Digital AC Output Modules

Cat. No.	Outputs	Voltage Category	Output Current Rating	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-OA2	2 Non-isolated, current sourcing	120/220V AC (74V AC... 264V AC)	1.5 A (2 channels @ 0.75 A each)	75 mA	2 W at 264V AC	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS
1734-OA4	4 Non-isolated, current sourcing		2.0 A (750 mA per output)		3.5 W at 264V AC	

POINT Digital DC Input Modules

The 1734-IB4D module is a 4-channel 24V DC input module with short-circuit and open-wire diagnostics. Catalog numbers ending with "S" are safety-rated.

Cat. No.	Inputs	Voltage Category	Input Delay Time, On to Off	On-State Current, Min.	On-State Current, Max.	Off-State Current, Max.	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-IB2	2 current sinking	24V DC (10V DC...28.8V DC)	0.5 ms hardware + (0...65 ms selectable)	2 mA	5 mA	1.5 mA	75 mA	0.7 W at 28.8V DC	1734-TB or 1734-TBS
1734-IB4	4 current sinking							1.0 W at 28.8V DC	1734-TB, 1734-TBS, 1734-TB3, or 1734-TB3S*
1734-IB4D	4 Sink, diagnostic	24V DC (11V DC...28.8V DC)	–	2 mA	15 mA	–	50 mA	0.6 W at 28.8V DC	1734-TB, 1734-TBS, 1734-TOP, or 1734-TOPS
1734-IB8	8 current sinking	24V DC (10V DC...28.8V DC)	0.5 ms hardware + (0...65 ms selectable)	2 mA	5 mA	1.5 mA	75 mA	1.6 W at 28.8V DC	1734-TB or 1734-TBS
1734-IB8S	8 current sinking, safety-rated	24V DC (11V DC...28.8V DC)	–	3.3 mA	5 mA	1.3 mA	175 mA	2.44 W	1734-TB, 1734-TOP, 1734-TOP3
1734-IV2	2 current sourcing	24V DC (10V DC...28.8V DC)	0.5 ms hardware + (0...65 ms selectable)	2 mA	5 mA	1.5 mA	75 mA	0.7 W at 28.8V DC	1734-TB or 1734-TBS
1734-IV4	4 current sourcing							1.0 W at 28.8V DC	1734-TB, 1734-TBS, 1734-TB3, or 1734-TB3S*
1734-IV8	8 current sourcing							1.6 W at 28.8V DC	1734-TB or 1734-TBS

* 1734-TB3 or 1734-TB3S recommended.

POINT Digital DC Output Modules

Catalog numbers ending with "E" are electronically protected. Catalog numbers ending with "S" are safety-rated. The 1734-OB2EP module has 24V DC electronically protected, fast-switching high-current outputs.

Cat. No.	Outputs	Voltage Category	Output Current Rating, Max.	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-OB2	2 current sourcing	24V DC (10V DC...28.8V DC)	2.0 A per module, 1.0 A per channel	75 mA	0.8 W at 28.8V DC	1734-TB or 1734-TBS
1734-OB2E	2 current sourcing, electronically protected	24V DC (10V DC...28.8V DC)	2.0 A per module, 1.0 A per channel	75 mA	0.8 W at 28.8V DC	1734-TB or 1734-TBS
1734-OB2EP	2 current sourcing, electronically protected, fast-switching high-current	24V DC (10V DC...28.8V DC)	4.0 A per module, 2.0 A per channel	75 mA	3.4 W at 28.8V DC	1734-TB or 1734-TBS
1734-OB4	4 current sourcing	24V DC (10V DC...28.8V DC)	3.0 A per module, 1.0 A per channel	75 mA	1.2 W at 28.8V DC	1734-TB or 1734-TBS
1734-OB4E	4 current sourcing, electronically protected	24V DC (10V DC...28.8V DC)	3.0 A per module, 1.0 A per channel	75 mA	1.2 W at 28.8V DC	1734-TB, 1734-TBS
1734-OB8	8 current sourcing	24V DC (10V DC...28.8V DC)	3.0 A per module, 1.0 A per channel	75 mA	2.0 W at 28.8V DC	1734-TB or 1734-TBS
1734-OB8E	8 current sourcing, electronically protected	24V DC (10V DC...28.8V DC)	3.0 A per module, 1.0 A per channel	75 mA	2.0 W at 28.8V DC	1734-TB, 1734-TBS
1734-OB8S	8 current sourcing, safety-rated	24V DC (10V DC...28.8V DC)	1 A max per point	190 mA	3.02 W	1734-TB, 1734-TOP, 1734-TOP3
1734-OV2E	2 current sinking, electronically protected	24V DC (10V DC...28.8V DC)	2.0 A max per module, 1.0 A per output	75 mA	0.8 W at 28.8V DC	1734-TB or 1734-TBS
1734-OV4E	4 current sinking, electronically protected	24V DC (10V DC...28.8V DC)	3.0 A max per module 1.0 A per output	75 mA	1.2 W at 28.8V DC	1734-TB or 1734-TBS
1734-OV8E	8 current sinking, electronically protected	24V DC (10V DC...28.8V DC)	3.0 A per module, 1.0 A per channel	75 mA	2.0 W at 28.8V DC	1734-TB, 1734-TBS

POINT Digital DC Configurable Input/Output Module

The 1734-8CFG module is a 24V DC I/O module with 8 self-configuring points. The 1734-8CFGDLX module offers 8 self-configuring points and DeviceLogix capabilities. Each of the I/O points can be a DC input or output.

Cat. No.	Inputs/Outputs	Voltage Category	Input Voltage Range	Output Voltage Range	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-8CFG	8, self-configuring	24V DC	11V DC...28.8V DC	10V DC...28.8V DC	100 mA	2.6 W at 28.8V DC	1734-TB, 1734-TBS, 1734-TOP, 1734-TOPS
1734-8CFGDLX	8, self-configuring, with DeviceLogix8, self-configuring, with DeviceLogix						

POINT Digital Contact Output Modules

Cat. No.	Outputs	Voltage Range	Output Delay Time, On to Off, Max.*	Contact Resistance, Initial	Output Current Rating, Max.	Leakage Current, Off-State Output, Max	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-OW2	2 Form A N.O. relays	5...28.8V DC at 2.0 A resistive 48V DC at 0.5 A resistive 125V DC at 0.25 A resistive 125V DC at 2.0 A resistive 240V DC at 2.0 A resistive	26 ms	30 mΩ	2.0 A per channel	1.2 mA and bleed resistor thru snubber circuit @ 240V AC	80 mA	0.5 W	1734-TB or 1734-TBS
1734-OW4	4 Form A N.O. relays								
1734-OX2	2 Form C isolated N.O./N.C. relays		10 ms	30 mΩ	2.0 A per channel	2.0 mA and bleed resistor thru snubber circuit @ 240V AC	100 mA		

* Time from valid output off signal to relay deenergization by module.

Specialty I/O Modules

Counter Modules

The POINT I/O Counter/Encoder modules return the count or frequency in the form of a 24-bit binary number (0-16,777,215) expressed in a 32-bit word. Each counter has a user-selectable preset and rollover value associated with it. The counter mode only accepts single-phase inputs. The encoder mode only accepts 2-phase quadrature inputs.

Cat. No.	Number of Counters	Voltage Category	Compare Windows	Output Groups	Input Frequency, Max.	Output Delay Time, Off to On	On-State Current, Min.	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-IJ	1	5V DC	–	–	1.0 MHz counter and encoder X1 configurations (no filter) 500 kHz encoder X2 configuration (no filter) 250 kHz encoder X4 configuration (no filter)	–	≥5 mA	160 mA	1.1 W at rated load	1734-TB or 1734-TBS
1734-IK		24V DC (15V DC...24V DC)							1.5 W at rated load	1734-TB or 1734-TBS
1734-VHSC5	1	5V DC	4	1 group of 2		25 µs (load dependent)*		180 mA	1.5 W at rated load	1734-TB or 1734-TBS
1734-VHSC24		24V DC (15V DC...24V DC)							1.9 W at rated load	1734-TB or 1734-TBS

* Off to On delay is time from a valid output "on" signal to output energization.

Serial I/O Modules

Cat. No.	Inputs/Outputs	Description	PointBus Current (mA)	External DC Supply Current, Nom.	Power Dissipation, Max.	Terminal Base Unit
1734-SSI	1 Encoder channel	The **Synchronous Serial Interface Absolute Encoder Module** collects serial data from industrial absolute-position encoding sensors that use standard SSI protocol, including linear, rotary, and optical distance measuring devices. The module is inserted into a POINT I/O terminal base that provides common power, communications, and wiring connections for the SSI sensors. The module converts a serial data stream from an SSI sensor into absolute position data readable as a 32-hexadecimal value. Gray or Binary-code capable with gray to binary conversion, increasing or decreasing SSI count indication, 2 SSI word comparator values, and SSI word latching with I1 input.	110 mA	10...28V DC, 0.75 A max	0.94 W	1734-TB, 1734-TBS
1734-232ASC	1 Serial Interface channel	The **1734-232ASC and 1734-485ASC serial-interface modules** offer a serial-link communication interface solution for peripheral products with RS-232 (use the 1734-232ASC), RS-485, and RS-422 ports (use the 1734-485ASC). These modules allow a device with serial-interface output (i.e., bar code readers) to communicate up to 128 bytes of ASCII data onto any network supported by POINT I/O. Each module is a single-channel, full-duplex interface and is rated for up to 38.4k baud. LED indicators on the modules offer diagnostics for the module, POINTBus backplane, and transmit/receive status indication.	75 mA	10...28V DC 1.0 A max	0.75 W at 28.8V DC	1734-TB or 1734-TBS
1734-485ASC	1 Serial Interface channel		75 mA	10...28V DC 1.0 A max	0.75 W at 28.8V DC	1734-TB or 1734-TBS

Address Reserve Module

Cat. No.	Description	PointBus Current (mA)	Power Dissipation, Max.	Terminal Base Unit
1734-ARM	The **Address Reserve Module** is a single-slot 12 mm wide smart slot filler. Use the module to retain a node address for later insertion of any future option.	75 mA max at 5V DC	0.375 W at 5V DC	1734-TB, 1734-TBS

I/O Adapter and Communication Interface Modules

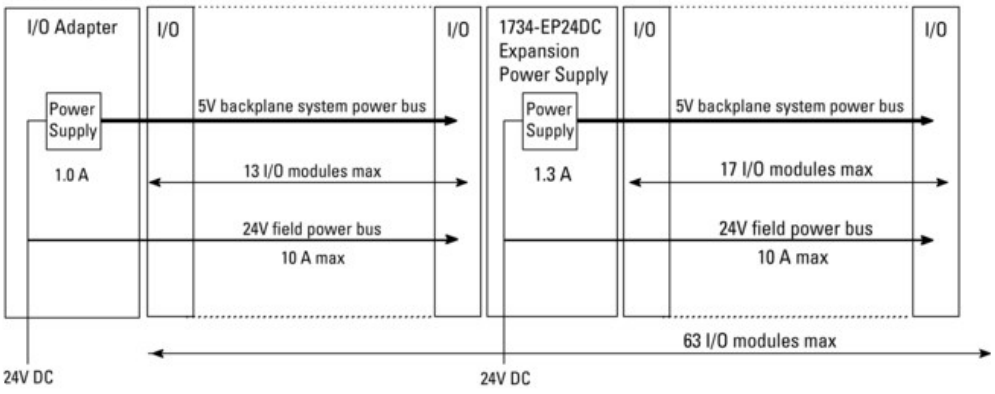
POINT I/O has two classes of communication interfaces.

An **I/O adapter module** provides an isolated DC/DC converter between field 24V DC and 5V backplane. You can connect up to 13 I/O modules and an I/O adapter with a maximum of 10 A field power. Additional I/O modules require the use of one or more POINT I/O 24V DC expansion power units. An I/O adapter supports up to a maximum of 63 I/O modules. The I/O adapter modules are available for ControlNet, DeviceNet (with and without subnet connectivity), EtherNet/IP, or PROFIBUS DP networks.

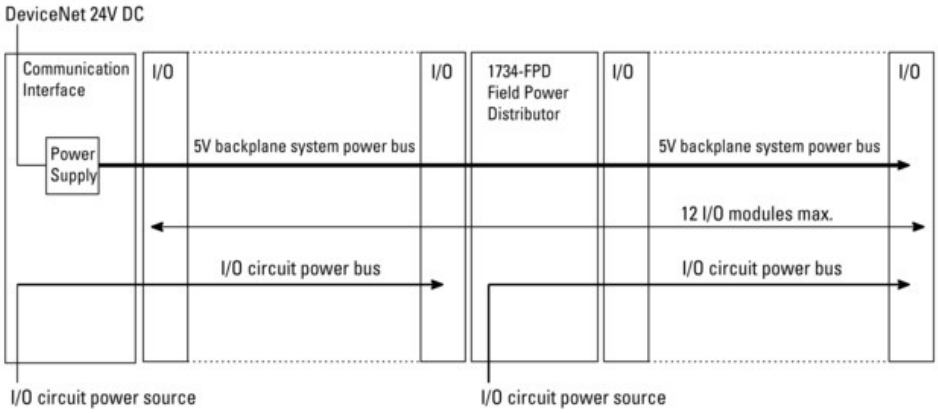
The **DeviceNet Communication Interface module** interfaces I/O modules to the DeviceNet link and converts field 24V DC power to 5V DC backplane power. The

backplane power is derived from the DeviceNet network and is not isolated. I/O circuits require a power supply specified for the I/O module connected to the right of the communication interface module. You can connect up to 13 I/O modules to the DeviceNet Communication Interface module, with a maximum of 10 A field power.

POINT I/O with an I/O Adapter Module



POINT I/O with Communication Interface Module



I/O Adapter and Communication Interface Modules Product Selection

Cat. No.	Description	Compatible with POINT Guard I/O	Supports Expansion Power Supplies	Number of I/O Points, Max.*
DeviceNet				
1734-PDN	**DeviceNet Communication Interface** • Each POINT I/O module counts as a node on the main DeviceNet network. • Total backplane current of I/O modules cannot exceed 1.3 A.	Yes	No	136
1734-ADN	**DeviceNet I/O Adapter** • A total of 63 POINT I/O modules can be assembled on a single DeviceNet node.	No	Yes	504
1734-ADNX	**DeviceNet I/O Adapter with Expansion Port** • A total of 63 POINT I/O modules can be assembled on a single DeviceNet node. • Expansion network port allows for a DeviceNet subnet. • Increases the reach of DeviceNet from 500 to 1500 meters. • Increases nodes per DeviceNet scanner from 63 to more than 126 (dependent on DeviceNet scanner capacity).	No	Yes	504
ControlNet				
1734-ACNR	**ControlNet I/O Adapter** • A total of 63 POINT I/O modules can be assembled on a single ControlNet node. • Up to 25 direct connections and 5 rack connections are allowed.	No	Yes	504
EtherNet/IP				
1734-AENT	**EtherNet/IP Twisted Pair Media I/O Adapter** • A total of 63 POINT I/O modules can be assembled on a single EtherNet/IP node. • Refer to the User Manual to determine the ratings for direct and rack connections allowed.	Yes	Yes	504
1734-AENTR	**2-Port EtherNet/IP I/O Adapter Module** • Inlcudes 2 EtherNet/IP ports, configured as embedded switch. • Supports star, tree, linear, and ring topologies. • Up to 20 direct connections and 5 rack optimized connections (digital I/O only) are allowed. • Total backplane current of I/O modules cannot exceed 0.8 A.	Yes	Yes	504
PROFIBUS DP				
1734-APB	**PROFIBUS DP I/O Adapter** • A total of 63 POINT I/O modules can be assembled on a single PROFIBUS DP node.	No	Yes	504

* Using the eight-point digital I/O modules.

Specifications

Cat. No.	Input Voltage Range	Field Side Power Requirements	Inrush Current	Power Consumption (W) at 24V	Power Dissipation, Max.	PointBus Current (mA)
1734-PDN	11…25V DC DeviceNet specification	400 mA at 24V DC (+4% = 25V DC)	6 A for 5 ms	8.0 W	1.2 W at 25V	1300⋆
1734-ADNX	10…28.8V DC	400 mA at 24V DC (+20% = 28.8V DC)	6 A for 10 ms	8.0 W	2.8 W at 28.8V	1000‡
1734-ACNR		425 mA at 24V DC (+20% = 28.8V DC)		8.0 W	2.8 W at 28.8V	1000‡
1734-AENT		400 mA at 24V DC (+20% = 28.8V DC)		4.5 W	2.8 W at 28.8V	700§
1734-AENTR		24V DC at 400 mA nom 12V DC at 800 mA nom 10…28.8V DC, 1000 mA max		10.4 W	6.3 W at 28.8V	800
1734-APB		400 mA at 24V DC (+20% = 28.8V DC)		8.0 W	2.8 W at 28.8V	1000‡

⋆ 1300 mA at 5V DC ±5% (4.75…5.25V).
‡ 1000 mA at 5V DC ±5% (4.75…5.25V).
§ 700 mA when input voltage < 17V DC.

Power Supplies

All POINT I/O modules are powered from the backplane by a POINT I/O adapter module, which includes a built-in power supply, or an expansion power supply. For POINT I/O adapters power specifications see I/O Adapter and Communication Interface Modules.

Expansion Power Unit

The POINT I/O Expansion Power Supplies extend the backplane bus power and create a new field voltage partition segment for driving field devices for up to 17 I/O modules, depending on the current required for each module and the DIN-rail mounting position. The expansion power unit separates field power from I/O modules to the left of the unit, effectively providing functional and logical partitioning for:

- Separating field power between input and output modules.
- Separating field power to the analog and digital modules.
- Grouping modules to perform a specific task or function.

Cat. No.	Input Voltage	Field Side Power Requirements, Max.	Inrush Current, Max.	PointBus Output Current Rating	Power Consumption, Max.	Power Dissipation, Max.
1734-EP24DC	24V DC (10…28.8V DC)	400 mA at 24V DC (+20% = 28.8V DC max)	6 A for 10 ms	Horizontal mounting: 1 A at 5V DC for 10…19.2V input; 1.3 A @ 5V DC for 19.2…28.8V input Vertical mounting: 1 A at 5V DC for 10…28.8V input	9.8 W at 28.8V DC	3.0 W at 28.8V DC
1734-EPAC	120/240V AC (85…264V AC)	200 mA at 120V AC, 100 mA at 240V AC	2 A for 6 ms	Horizontal mounting: 1.3 A at 5.2V DC Vertical mounting: 1.0 A at 5.2V DC	15.1 W at 264V AC	8.4 W at 264V AC

Field Power Distributor

The POINT I/O Field Power Distributor Module (1734-FPD) passes through all POINT I/O backplane signals, but does not provide additional POINTBus backplane power. The field power distributor gives you the ability to change the field power distribution source for I/O modules to the right of the field power distributor. This facilitates logical or functional partitioning of low-channel count, high I/O mix applications using any of the communication adapters. Use the field power distributor with a broad range of voltage inputs including 5V DC to 250V DC and/or 24V AC to 240V AC applications and I/O modules.

Cat. No.	Operating Voltage Range
1734-FPD	10…28.8V DC 120V/240V AC

Terminal Base Assemblies and RTBs

A Terminal Base Assembly consists of a POINT I/O mounting base and a separate removable terminal block (RTB) that plugs into the mounting base. The base mounts directly on the DIN rail, either vertically or horizontally, and includes user-selectable mechanical keying to prevent incorrect I/O module placement. The RTB plugs into the mounting base and provides the terminal locations for field wiring. It also provides vertical access to wire and screw terminations. The I/O module plugs into the mounting base above the RTB. The RTB separates independently from the mounting base and I/O module to facilitate rapid installation and commissioning of the system. Spare or replacement RTBs can be ordered separate from the terminal base assembly.

Alternatively, a POINT I/O one-piece mounting base, which includes integrated terminal locations, is also available. The I/O module plugs into the one-piece mounting base.

Terminal Base Assemblies

Cat. No.	Description	Number of Terminals	Termination Type
1734-TB	Two-piece terminal base assembly. Includes a POINT I/O mounting base and separate RTB.	8	Screw-clamp
1734-TBS		8	Spring-clamp
1734-TB3		12	Screw-clamp
1734-TB3S		12	Spring-clamp
1734-TBCJC‡		Cold-junction compensation wiring base assembly	Screw-clamp
1734-TOP	One-piece POINT I/O mounting base with integrated terminal locations.	8	Screw-clamp
1734-TOPS		8	Spring-clamp
1734-TOP3		12	Screw-clamp
1734-TOP3S		12	Spring-clamp

‡ Use the cold-junction compensation wiring base assembly with the 1734-IT2I thermocouple input module.

Removable Terminal Blocks

Use this table to select spare or replacement RTBs.

Cat. No.	Description	Field Power Supply Voltage Range	Field Power Supply Current, Max.	Wire Size	Wiring Category	Terminal Base Screw Torque
1734-RTB	8-terminal screw-clamp RTB	24V DC, 120/240V AC	10 A	14 AWG (2.5 mm2) ... 22 AWG (0.25 mm2) solid or stranded wire rated at 75 °C or higher; 3/64 in (1.2 mm) insulation max.	2 ‡	0.6 N•m (7 lb•in)
1734-RTBS	8-terminal spring-clamp RTB					
1734-RTB3	12-terminal screw-clamp RTB					
1734-RTB3S	12-terminal spring-clamp RTB					
1734-RTBCJC	Cold-junction compensation RTB, screw-clamp					0.5...0.6 N•m (5...7 lb•in)

⋆ Use the 1734-RTBCJC cold-junction compensation RTB with the 1734-IT2I thermocouple input module.
‡ Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, “Industrial Automation Wiring and Grounding Guidelines.”

Termination Modules

The POINT I/O Common Terminal Module and Voltage Terminal Module provide expansion of the termination capability of POINT I/O. The modules support higher density (8 channel) POINT I/O modules and management of wiring of field devices to the POINT I/O solution.

Cat. No.	Description	Quantity
1734-CTM	Common Terminal Module. Single-slot 12 mm wide Common Terminal Modules.	10
1734-VTM	Voltage Terminal Module. Single-slot 12 mm wide Voltage Terminal Modules.	10

Cat. No.	Keyswitch Position	Isolation Voltage	Field Power Supply Voltage Range	Field Power Supply Current, Max.
1734-CTM	5	250V (continuous), Basic Insulation Type Type tested at 1600V DC for 60 s, field-side to system	10...28.8V DC, 120/240V AC	2 A per point, 4 A module
1734-VTM				

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